ORDER

DRAFT
DOE O 461.2

Approved: XX-XX-XX

ONSITE PACKAGING AND TRANSFER OF MATERIALS OF NATIONAL SECURITY INTEREST

NATIONAL NUCLEAR SECURITY ADMINISTRATION

Office of Defense Programs

ONSITE PACKAGING AND TRANSFER OF MATERIALS OF NATIONAL SECURITY INTEREST

1. PURPOSE. This Order establishes safety requirements and responsibilities for onsite transfers of materials of national security interest. This Order incorporates the following major objectives:

   a. To establish policies, requirements, and responsibilities for onsite packaging and transfer of materials of national security interest that ensure safe use of Transportation Safeguards System (TSS), non-TSS Government- and contractor-owned and/or leased resources, and consistent compliance with Department of Energy (DOE) directives.

   b. To establish a process of identifying and mitigating undue risk of onsite transfers that are non-compliant with U.S. Department of Transportation (DOT) and Nuclear Regulatory Commission (NRC) regulations.

2. CANCELLATIONS. DOE O 461.1A, *Packaging and Transfer or Transportation of Materials of National Security Interest*, dated 4-26-04. Cancellation of a directive does not, by itself, modify or otherwise affect any contractual or regulatory obligation to comply with the directive. Contractor Requirements Documents (CRDs) that have been incorporated into a contract remain in effect throughout the term of the contract unless and until the contract or regulatory commitment is modified to either eliminate requirements that are no longer applicable or substitute a new set of requirements.

3. APPLICABILITY.

   a. Departmental Applicability. Except for the exclusions in paragraph 3.c, this Order applies to Departmental elements that have responsibility for activities associated with onsite transfer of materials of national security interest.

      The Administrator of the National Nuclear Security Administration (NNSA) must assure that NNSA employees comply with their responsibilities under this Order. Nothing in this Order will be construed to interfere with the NNSA Administrator's authority under section 3212(d) of Public Law (P.L.) 106-65 to establish Administration-specific policies, unless disapproved by the Secretary.

   b. DOE Contractors.

      (1) Except for the exclusions noted in paragraph 3.c, the CRD (Attachment 1) identifies the requirements of this Order that apply to contracts that include the CRD.

      (2) The CRD must be included in contracts under which any of the following operations are performed related to materials of national security interest:

(a) analysis of containers for the transfer of materials of national security interest;

(b) preparation of onsite Transportation Safety Document (TSD) authorization;

(c) preparation of materials of national security interest for loading into shipping containers and packaging of the materials in the containers;

(d) loading the packages onto transport vehicles designated for transfer and securing them to the transport vehicles;

(e) preparing schedules for and conducting national security transfers;

(f) unloading transport vehicles;

(g) storing unloaded containers;

(h) and opening the sealed packages and performing authorized operations.

c. Equivalencies and Exepmtions. This Order does not apply to the following:

(1) Exemptions. Exemptions to this Order may be granted, provided the proposed exemptions are not prohibited by law and do not present an undue risk to the public health and safety, workers, or environment.

(a) Requests for Order exemptions received from contractors by the local site/area office must be submitted in writing by the office to the Administrator, NNSA, through the Deputy Administrator for Defense Programs.

(b) Decisions on Order exemptions must be defined in writing and must state the reasons for granting or denying the exemptions and, if granted, the basis for determining the exemptions do not present an undue risk to the public health and safety, workers, or environment.

(2) Exemption. Facilities, packaging, or transportation activities regulated or controlled by the NRC.

(3) Exemption. Packaging and transportation of hazardous materials subject to DOE O 460.1B, *Packaging and Transportation Safety*, dated 4-4-03.

(4) Equivalency. In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at 50 USC sections 2406 and

2511, and to ensure consistency throughout the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Order for activities under the Director's cognizance, as deemed appropriate..

(5) Equivalency. Non-compliant onsite transfers that are included in DOE-approved Safety Basis per Title 10 Code of Federal Regulations (CFR) Part 830, Appendix A to Subpart B, "Documented Safety Analysis."

(6) Equivalency. Onsite transfers that use TSS resources that comply with TSS safety basis.

4. REQUIREMENTS.

a. Packaging and Transfer Procedures. Each site must maintain a set of packaging and transfer procedures, approved by the appropriate contractor authority. The responsible DOE field organization will provide the oversight to ensure written procedures are implemented and comply with packaging and transfer authorization basis.

b. Transportation Safety Document. Onsite transportation safety documentation must be prepared in accordance with Attachment 3 of this Order, which satisfies and sets forth the methodology for preparing a documented safety analysis as referenced in 10 CFR Part 830, Appendix A to Subpart B, Section F.

c. Review and Approval Process. A DOE/NNSA team reviews the TSD and makes recommendations to the DOE site manager for approving the application/ documentation for non-compliant transfers.

d. Transfer Authorization. DOT compliant onsite transfers of materials of national security interest do not require additional authorization. Non-compliant transfers must be authorized through a DOE/NNSA-issued TSD safety evaluation report (SER).

(1) Compliant Onsite Transfers of Radioactive Material. DOT compliant onsite transfers of radioactive materials of national security interest do not require special authorization.

(a) All packages must comply with DOT regulations. Type B quantities of material must be packaged in a DOE, NNSA, or NRC certified container.

(b) Transfer motor vehicles must comply with DOT regulations.

(c) Personnel performing transfer operations must comply with DOT regulations.

(2) Non-compliant Onsite Transfers of Radioactive Material. Onsite transfers for all materials of national security interest not in compliance with DOT regulations must be authorized by an approved TSD and SER. The TSD establishes the approved safety envelope for packaging and transfer operations for materials of national security interest. The TSD, when approved, satisfies the requirements of this Attachment 3 of this Order and/or 10 CFR Part 830, Appendix A to Subpart B, Section F. The SER presents the results of the DOE/NNSA review team and provides the framework for approval of the TSD giving the contractor authority to transfer these materials.

Non-compliant onsite transfers that are included in DOE-approved Safety Basis per 10 CFR Part 830, Appendix A to Subpart B, "Documented Safety Analysis" do not require a TSD.

e. Quality Assurance. Packaging and transfer activities for materials of national security interest must be conducted in accordance with DOE O 414.1C, *Quality Assurance*, dated 6-17-05. Each site must maintain a compliant Quality Assurance Program, approved by the appropriate DOE field organization, for the packaging and transfer of materials of national security interest. Compliant transfers of Type B quantities of radioactive material must be conducted in accordance with a 10 CFR 71 Subpart H compliant Quality Assurance Plan.

f. Transfer Vehicle.

(1) Each compliant transfer must be prepared and transported in accordance with the applicable hazardous materials regulations (49 CFR Parts 100-185, "Pipeline and Hazardous Materials Safety Administration, Department of Transportation").

(2) All transfer activities performed under the TSS must be conducted according to 10 CFR Part 830, "Nuclear Safety Management."

(3) Government or contractor vehicles (owned or leased) must be operated in compliance with the applicable Federal Motor Carrier Safety Regulations (FMCSRs) (49 CFR Parts 350-399). All transfers that use non-compliant vehicles must be performed under the purview of an approved TSD.

(4) Transfer of nuclear explosives must meet the requirements of DOE O 452.1D, *Nuclear Explosive and Weapon Surety Program*, dated 4-14-09, and DOE O 452.2D, *Nuclear Explosive Safety*, dated 4-14-09.

g. Scheduling Transportation Safeguards System (TSS) Transfers.

If TSS resources are required for onsite transfers, secure Transportation Shipping Requirement forecasts will be developed for the Assistant Deputy Administrator for Secure Transportation. Refer to DOE O 461.1B, *Packaging and Transportation for Offsite Shipment of Materials of National Security Interest*, dated XX-XX-XX, for the requirements and process to request and schedule TSS resources.

h. Training. All personnel who manage, supervise, support, and/or perform packaging and transfer operations must be appropriately trained and qualified.

(1) Training programs and procedures for safe packaging and transfer will be provided. The training programs must include the applicable hazardous materials training requirements of 49 CFR 172.704.

(2) In addition to paragraph 4.h.(1), DOT compliant transfer personnel must be trained and qualified according to the requirements of 49 CFR 391.11, "General Qualifications of Drivers."

(3) DOE/NNSA must establish and maintain appropriate qualification standards for personnel with Headquarters and field oversight responsibilities per DOE O 226.1A, *Implementation of Department of Energy Oversight Policy*, dated 7-31-07.

(4) Auditable training records must be maintained.

i. Documents/Records. Documents and records specified in this Order must be maintained according to DOE/National Archives and Records Administration-approved records retention and disposition schedules.

j. Assessments. Assessments must be performed on packaging and transfer operations that implement this Order according to DOE O 226.1A.

5. RESPONSIBILITIES.

a. Administrator, NNSA.

(1) Ensures that requirements and responsibilities are implemented and executed in accordance with this Order.

(2) Grants or denies requests for exemptions to this Order.

b. Principal Deputy Administrator. Recommends requests for Order exemptions to the Administrator.

c. Chief, Defense Nuclear Safety. Advises the Principal Deputy Administrator on nuclear safety issues related to requests for exemptions to this Order.

d. Deputy Administrator for Defense Programs.

(1) Assigns line management responsibilities.

(2) Provides overall management and policy direction for NNSA packaging activities and conduct of TSS operations.

(3) Ensures oversight of contractor packaging and transfer operations assessments. This includes assessing site office oversight programs per DOE O 226.1A.

(4) Reviews written requests for Order exemptions from local site/area offices and makes recommendation to the Administrator, NNSA, for approval or denial of those exemptions.

e. Director, Office of Facility and Infrastructure Acquisition and Operations.

(1) Coordinates with appropriate DOE organizations in the development of standards and directives for onsite transfers.

(2) Coordinates with appropriate DOE organizations in the development of packagings that can fulfill requirements for organizations outside of NNSA.

(3) For NNSA, performs packaging and transfer line management oversight that is focused primarily on the NNSA field elements and also assesses contractor activities, as needed, in order to evaluate the implementation and effectiveness of field element line management oversight. Oversight will focus on high-hazard packaging and transfer operations.

f. Director, Office of Safety. Advises the Deputy Administrator for Defense Programs on nuclear safety requirements for packaging and transfer of materials of national security interest.

g. Field Organization Managers.

(1) Approve SERs and TSDs.

(2) Ensure that TSDs are implemented by site contractors.

(3) Ensure that NRC, DOE, and NNSA approved Type B packages used for onsite transfers comply with packaging certificates of compliance (CoCs) or Offsite Transportation Certificates (OTCs).

(4) Maintain current copies of all OTCs and CoCs and their respective Safety Analysis Reports for Packaging (SARPs) and SERs for packaging operations performed at their sites and/or by contractors they manage.

(5) Implement oversight program and conduct assessments of packaging and transfer operations according to DOE O 226.1A.

(6) Ensure that the site has DOE personnel who are assigned and trained to oversee compliance with the requirements of this Order, and that oversight is performed and documented according to DOE O 226.1A.

(7) Notify contracting offices when this Order applies to specific contracts, and ensure the CRD is incorporated, as appropriate.

(8) Ensure that initial transfer requests for Office of Secure Transportation (OST) assets are submitted in accordance with current TSRs instructions issued by OST.

(9) Submit to the Administrator, NNSA, through the Deputy Administrator for Defense Programs, requests for Order exemptions.

h. Assistant Deputy Administrator for Secure Transportation.

(1) Defines frequency and content of site shipping requirement forecasts.

(2) Authorizes the use of OST assets for onsite transfers.

(3) Ensure that TSS DSAs includes applicable onsite transfers.

i. Director, NNSA Service Center.

(1) Provides guidance to field organizations and contractors who prepare TSDs.

(2) At the requests of NNSA field organizations, provides subject matter experts to support the federally chaired transportation safety documentation team.

(3) Approves and issues OTCs for packages used to transfer materials of national security interest.

(4) Maintains copies of all currently approved NNSA SARPs, OTCs, SERs, and other supporting documentation.

(5) Authorizes users of NNSA certified Type B packages, and revokes authorized user status when users fail to comply with OTC requirements.

(6) Ensures that all NNSA Service Center personnel who perform package certification, onsite TSD reviews, and packaging and transfer appraisal and evaluation functions are trained and qualified.

(7) Provides support to NNSA site offices conducting assessments of packaging and transfer operations.

(8) Provides support to NNSA site offices in conducting TSD review/comment process.

(9) Provides support to NNSA Headquarters as lead, and/or participates in periodic surveillance of packaging and transfer activities at NNSA user sites.

6. DEFINITIONS. See Attachment 2.

7. REFERENCES.

a. Title XXXII of P.L. 106-65, National Nuclear Security Administration Act, as amended, which established a separately organized agency within the Department of Energy.

b. DOE O 226.1A, *Implementation of Department of Energy Oversight Policy*, dated 7-31-07.

c. DOE O 414.1C, *Quality Assurance*, dated 6-17-05.

d. DOE O 452.1D, *Nuclear Explosive and Weapon Surety Program*, dated 4-14-09.

e. DOE O 452.2D, *Nuclear Explosive Safety,* dated 4-14-09.

f. DOE O 460.1B, *Packaging and Transportation Safety*, dated 4-04-03.

g. DOE O 461.1B, *Packaging and Transportation for Offsite Shipment of Materials of National Security Interest*, XX-XX-XX.

h. Title 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

i. Title 10 CFR Part 830, "Nuclear Safety Management."

j. Title 49 CFR Parts 100-185, "Pipeline and Hazardous Materials Safety Administration, Department of Transportation."

k. Title 49 CFR Parts 350-399, "Federal Motor Carrier Safety Administration, Department of Transportation."

8. CONTACT. Questions concerning this Order should be addressed to the NNSA Facility Operations Division at 505-845-4325.

BY ORDER OF THE SECRETARY OF ENERGY:

DANIEL PONEMAN
Secretary of Energy

CONTRACTOR REQUIREMENTS DOCUMENT
DOE O 461.2, ONSITE PACKAGING AND TRANSFER OF MATERIALS OF NATIONAL SECURITY INTEREST

This Contractor Requirements Document (CRD) establishes requirements for Department of Energy (DOE) site/facility management contractors, including National Nuclear Security Administration (NNSA) contractors. Contractors must comply with the requirements listed in the CRD to the extent set forth in their contracts. Definitions for key terms used in this CRD are provided in Attachment 2.

Regardless of the performer of the work, contractors are responsible for compliance with the requirements of this CRD. Contractors are responsible for flowing down the requirements of this CRD to subcontracts at any tier to the extent necessary to ensure the contractor's compliance with the requirements. In doing so, the contractor must not unnecessarily or imprudently flow down requirements to subcontracts. That is, the contractor must: ensure that it and its subcontractors comply with the requirements of this CRD, and incur only costs that would be incurred by a prudent person in the conduct of a competitive business.

1. Contractors must maintain a set of packaging and transfer procedures, approved by the appropriate contractor authority, which ensures onsite transfers are performed in a manner compliant with the requirements of this CRD.

2. Contractors who conduct transfers of materials of national security interest that are noncompliant with U. S. Department of Transportation (DOT) or Nuclear Regulatory Commission (NRC) requirements must prepare and submit an onsite Transportation Safety Document (TSD) or Documented Safety Analysis (DSA) to DOE for approval. For the exception of format or the exact content, the TSD must be prepared in accordance with Attachment 3.

3. Contractors who offer materials of national security interest for onsite transfer who package and prepare those shipments in accordance with the requirements specified in an NNSA-issued Offsite Transportation Certificate (OTC), or an NRC or DOE Certificate of Compliance (CoC), as applicable, are considered to have a compliant transfer, providing the transfer vehicle complies with requirement 8 of this CRD.

4. The contractor may not commence any non-compliant onsite transfer operations until all TSD or DSA approvals have been granted, the contractor has complied with all requirements contained in the applicable authorization documents (TSDs), and packaging procedures are in place.

5. Contractors must maintain current copies of the TSDs, Documented Safety Analyses (DSAs), OTCs, DOE and/or NRC CoCs, and associated Safety Evaluation Reports (SERs), Safety Analysis Reports for Packaging (SARPs), and other supporting documents applicable to their operations. Documents and records specified in this CRD must be maintained according to DOE/National Archives and Records Administration-approved records retention and disposition schedules.

6. Contractors who package a Type B quantity of radioactive material in a certified Type B package or a package authorized by a TSD, must develop packaging procedures that comply with the CoC, OTC, and/or TSD.

7. For compliant transfers, contractors must conduct Type B packaging and transfer activities for materials of national security interest in compliance with a Title 10 Code of Federal Regulations (CFR) 71, Subpart H, Quality Assurance Plan. The Quality Assurance Plan must be submitted to the contractor's responsible field organization for review and approval.

8. Contractors must conduct less than Type B packaging and transfer activities for materials of national security interest in accordance with a quality assurance program meeting the requirements of DOE O 414.1C, *Quality Assurance*, dated 6-17-05.

9. For compliant transfers, a contractor that is a State agency not otherwise subject to DOT jurisdiction, and any other DOE contractor who operates a Government or contractor vehicle (owned or leased) onsite in performance of contract activities, must ensure that the operations comply with applicable Federal Motor Carrier Safety Regulations (FMCSR) (49 CFR Parts 350-399).

10. For compliant transfers, contractors must ensure all personnel who support and/or perform packaging and transfer operations for materials of national security interest are trained and qualified to perform their assigned functions. The training program must also comply with the applicable basic hazardous materials training requirements of 49 CFR 172.704.

11. Contractors must maintain auditable training records.

12. Contractors who engage in packaging and transfer of materials of national security interest must conduct those activities in accordance with approved plans and procedures.

13. Contractors must ensure that their organizations develop and implement formal oversight programs and ensure that oversight activities are performed and documented.

14. Contractors must ensure that their organizations perform annual self-assessments of activities covered by this CRD.

15. Transfer of nuclear explosives must meet the requirements of DOE O 452.1D, *Nuclear Explosive and Weapon Surety Program*, dated 4-14-09, and DOE O 452.2D, *Nuclear Explosive Safety*, dated 4-14-09.

16. Contractors must ensure that Transportation Shipping Requirement forecasts are submitted if Transportation Safeguards System (TSS) resources are required for onsite transfers. Refer to DOE O 461.1B, *Packaging and Transportation for Offsite Shipment of Materials of National Security Interest*, dated XX-XX-XX, for the requirements and process to request and schedule TSS resources.

DEFINITIONS

1. Compliant Packages. Packages that meet the requirements of 10 CFR Part 71, NRC and DOE CoCs, and/or NNSA OTCs.

2. Compliant Transfers. Onsite transfer requires that both the packaging and transporter are in compliance with DOT regulations and, as applicable, NRC/DOE/NNSA issued CoCs for packaging.

3. Documented Safety Analysis. A documented analysis of the extent to which a nuclear facility can be operated safely with respect to the public, workers, and the environment, including a description of the conditions, safe boundaries, and hazard controls that provide the basis for ensuring safety per 10 CFR Part 830 Appendix A to Subpart B.

4. Exemption (from requirements). Formal request and approval from appropriate parties to allow Departmental elements or contractors to be exempted from complying with specific requirements of this directive.

5. Hazardous Materials. Those materials that are defined as hazardous (other than radioactive) in 49 CFR Parts 100-185. Also known as "HAZMAT."

6. Materials of National Security Interest. A class of strategic materials that are designated by competent authority as critical to our national security. This designation is primarily for fissionable nuclear material known as special nuclear material (SNM), but can include tritium. Items that contain these materials include nuclear explosives, nuclear components, special assemblies, classified assemblies, and miscellaneous SNM parts and compounds. The Assistant Secretary for Defense Programs may designate other special materials or items to receive the control and physical protection afforded this class of material.

7. Miscellaneous SNM Parts and Compounds. Piece parts of a nuclear component, U.S. Navy nuclear fuel elements, other specialized reactor fuel elements, subcritical experiment assemblies, criticality experiment machine parts, other nuclear device parts, broken piece parts, radioisotope thermoelectric generators, and radioactive sources and bulk materials in metallic or various chemical compounds that contain plutonium or enriched uranium.

8. Motor Vehicle. Any machine, tractor, trailer, or semi-trailer propelled or drawn by mechanical power and used on the highways/roads in the transportation of property, or any combination thereof determined by the DOT Federal Motor Carrier Safety Administration.

9. Non-compliant transfers. A transfer configuration that does not meet the applicable requirements of NRC/DOE/NNSA issued CoCs for packaging under 10 CFR 71, 49 CFR Parts 100-185, and/or 49 CFR Parts 350-399.

10. Nuclear Component. Major subassembly of a nuclear explosive that contains SNM in quantities sufficient to fuel a nuclear explosion (e.g., pit or canned subassembly). Note that subassemblies containing tritium and no SNM are not nuclear components.

11. Nuclear Explosive. An assembly containing fissile and/or fissionable materials and main charge high-explosive parts or propellants capable of producing a nuclear detonation (e.g., a nuclear warhead or nuclear explosive test device).

12. Offsite Transportation Certificate (OTC). An NNSA-prepared document, analogous to an NRC CoC that describes the Type B regulatory compliant package configuration, authorized contents, and transportation restrictions. An OTC authorizes shipment of Type B cargo within the TSS and for commercial carriers. An OTC may declare essential positive measures, administrative controls, and a maximum number of specified packages per transporter. Issuance of an OTC is demonstration of compliance with 10 CFR 71. It may be issued for either a one-time use or multiple uses up to 5 years, at which point it may be renewed.

13. Onsite. Any area within the boundaries of a DOE site or facility to which access is controlled.

14. Package. The packaging, together with its contents, as presented for transport.

15. Packaging. The assembly of components necessary to ensure compliance with the packaging requirements of 10 CFR Part 71. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shocks during transport. The conveyances, tie-down systems, and auxiliary equipment used in transport may sometimes be designated as part of the packaging.

16. Safety Analysis Report for Packaging (SARP). A document that provides a comprehensive technical evaluation of a packaging. The SARP consists of sections on general information; structural, thermal, containment, shielding, and criticality evaluations; operating procedures; acceptance tests; and maintenance and quality assurance programs. The purpose of the SARP is to demonstrate compliance with the applicable sections of 10 CFR Part 71 and 49 CFR Parts 100-185.

17. Safety Evaluation Report (SER). A document that provides the results of the Transportation Safety Document review panel's safety evaluation of the DSA and/or TSD.

18. Special Assembly. An assembly of one or more nuclear components that does not constitute a complete nuclear explosive and is not capable of producing a nuclear detonation [e.g., some NELAs, JTAs, or Laboratory Test Units (LTU)].

19. Special Nuclear Material (SNM). Uranium enriched in the isotopes 233 or 235, any isotope of plutonium, and any other material that NRC, pursuant to Section 51 of the Atomic Energy Act, as amended, determines to be SNM, not including source material.

20. Transfer. Onsite transportation activity, which includes packaging and transporter, that occurs within the site/facility boundaries of controlled Federal Government property not regulated by DOT.

21. Transportation Safeguards System (TSS). A DOE/NNSA system managed and operated by OST. It is used for the safe and secure movement of materials of national security interest and other cargo deemed appropriate by responsible program elements and approved by the Deputy Administrator for Defense Programs. Such operations are authorized under the Atomic Energy Act and its amendments.

22. Transportation Safety Document (TSD). A DOE-approved site-specific documented safety basis manual of plans and procedures that provides guidance, control, and definitions for the performance of activities related to packaging and transfer of materials of national security interest.

23. Transportation Shipping Request. A document provided by the shipper to OST and the receivers that includes the following information: shipment number, pickup and delivery points, delivery date, quantity and type of packages in shipment, security classification of shipment, the authorization basis, special handling requirements, hazardous material information, approved confirmations from both shipper and receiver, 24-hour emergency response telephone numbers, cargo tie-down restraint configurations, and name of the program office for which the shipment is being performed.

PACKAGING AND TRANSFER OF MATERIALS OF NATIONAL SECURITY INTEREST

1. PURPOSE. This attachment establishes requirements for operational safety controls for onsite transfer operations and provides Department of Energy (DOE) packaging and transportation safety requirements and policy objectives for development of an onsite Transportation Safety Document (TSD). DOE contractors must document this program in their TSDs and develop implementing procedures.

   a. This attachment provides minimum safety requirements for the acceptance and use of onsite packaging for the staging and onsite transfer of materials of national security interest. The design and development of suitable packaging configurations remains the responsibility of the DOE site or facility. Nuclear explosives will be transferred onsite utilizing the requirements for handling equipment identified in DOE O 452.2D, *Nuclear Explosive Safety,* dated 4-14-09, in addition to the requirements of this Order and attachment.

   a. Onsite transportation safety documentation prepared in accordance with Annex 1 of this attachment defines the methodology for preparing a documented safety analysis as referenced in 10 CFR 830.204 and Part 830, Appendix A to Subpart B, Section F, "Documented Safety Analysis," for all onsite transfers within hazard category 1, 2, and 3 DOE nuclear facilities."

   b. U.S. Department of Transportation (DOT) compliant shipments, including packaging, of radioactive material and/or other hazardous materials can be transferred without special authorization and/or documented TSD.

2. SCOPE. This attachment describes requirements that apply only to onsite packaging and transfer activities at DOE facilities that retain and transport materials of national security interest, pursuant to this Order.

3. BACKGROUND.

   a. Nuclear Explosives. Nuclear explosive operations require additional special safety considerations because of the potential high consequence of an accident or unauthorized act. DOE O 452.2C provides a complete safety program for nuclear explosive operations. The Order requires that each operations office have a comprehensive program for the safety of nuclear explosive operations that integrates nuclear explosive safety requirements with other safety requirements. DOE O 452.2C further specifies that the requirements for the safety of nuclear explosive operations may be implemented through the Integrated Safety Management approach.

   b. Materials of National Security Interest. Special nuclear material, nuclear components, and special assemblies are staged and transferred onsite in approved packaging configurations via site-specific transporters specifically designed for

onsite transfer. Special assemblies, such as nuclear explosive-like assemblies, are often transported on approved handling equipment.

4. OBJECTIVES. This attachment addresses safety requirements for onsite transfers of materials of national security interest. There are two major objectives: (1) to establish requirements for onsite packaging and transfer of materials of national security interest that ensure safe use of the Transportation Safeguards System (TSS), non-TSS government- and contractor-owned and/or leased resources, and consistent compliance with DOE directives; and (2) to establish a process of identifying and mitigating undue risks associated with onsite transfers that are non-compliant with DOT and Nuclear Regulatory Commission (NRC) regulations.

   a. RESPONSIBILITIES. The transfer approval authority for onsite packaging and transfer requirements is the responsibility of DOE field organization managers.

   b. GENERAL SITE OBJECTIVES**.** Each site is required to document its compliance with this attachment by developing the onsite TSD in section 5 below. The following general objectives apply to the onsite packaging and transfer of materials of national security interest governed by this Order:

      (1) Promulgate the safety envelope using a graded approach to significantly reduce aggregate risk to the public, site workers, and the environment.

      (2) Develop a packaging evaluation program founded on the safety envelope tailored to site-specific operations.

      (3) Develop, track, revise, and evaluate onsite packaging and transfer operations for each site in accordance with the site-approved Quality Assurance Program.

5. TRANSPORTATION SAFETY DOCUMENT. The process of identifying and mitigating undue risk is the development of an onsite TSD, which establishes the approved safety envelope for packaging and transfer operations of materials of national security interest for non-compliant transfers. The safety envelope will be defined by the hazards associated with the materials, appropriate analysis of credible accident scenarios, establishment of controls for prevention and mitigation, and implementation of a safety management strategy to ensure operations are performed within a formality of operations framework.

   a. The TSD is the approved safety envelope for packaging and transfer operations for these materials at a site. This document, when approved, satisfies the requirements of this attachment and/or 10 CFR Part 830, Subpart B, “Documented Safety Analysis” and “Technical Safety Requirements”.

   b. Field organization managers must use the requirements in Annexes 1 and 2 of this attachment in developing the TSD and the assessment methodology for the graded safety approach for each type of onsite packaging and transfer of materials of

national security interest that are not compliant with DOT regulations. Transfer of Type B quantities of radioactive materials that are transported in DOE and/or NNSA certified packaging (i.e., Certificates of Compliance) do not require NNSA TSD transfer approval as referenced in this Order.

c. The TSD requirements will apply to all onsite packaging and transfer configurations pursuant to DOE O 461.1B, *Packaging and Transfer or Transportation of Materials of National Security Interest*, dated XX-XX-XX. Annex 1 of this attachment contains requirements that satisfy 10 CFR Part 830, Subpart B, and Annex 2 of this attachment contains requirements for onsite packaging and transfer configurations that are not subject to 10 CFR Part 830, Subpart B, requirements.

d. DOE recognizes that the onsite transfer requirements for materials of national security interest may differ from the modal transportation conditions established in the Federal regulations (for example, "Normal Conditions of Transport" in 10 CFR 71.71 and the "Hypothetical Accident Conditions" in 10 CFR 71.73). DOE sites may use a graded approach to onsite packaging and transfer for materials of national security interest. These materials will be grouped into a series of hazard levels per 10 CFR Part 830, "Nuclear Safety Management," followed by selection of onsite packaging and transfer requirements appropriate for the particular hazard level.

e. A transfer configuration is defined as a system or equipment approved for onsite transfer, which doesn't resemble the general physical appearance typically attributed to a hazardous material package (e.g. nuclear explosives within or on a handling gear). Utilization of Office of Secure Transportation assets requires full operational compliance as identified in DOE O 461.1B.

f. The TSD documents the safety envelope for each transfer. The TSD must substantiate the conclusion that a credible accident will not cause individuals to receive a total committed effective dose equivalent (TEDE) greater than the levels referenced in DOE-STD-1189, *Integration of Safety into the Design Process,* public protection criteria per Appendix A, section A.2.1. Also, DOE sites must specifically analyze fissile material transfers, and the safety documentation must demonstrate that both the administrative and operating controls would prevent a criticality event in all credible onsite transfer accidents and staging incidents.

g. As referenced in this Order, the TSD must be submitted to the NNSA site office manager for approval, including all updates to the document that reflect any changes to transfer operations that could impact safety to the public, workers, and/or environment. A crosswalk between the existing approved TSD and the requirements in this attachment is required to ensure the intent of the attachment is being met.

6. ONSITE PACKAGING AND TRANSFER PROCEDURES. Each facility or site must prepare onsite procedures for implementation of the TSD (per Annex1 or 2 of this attachment) and/or DOT compliant shipments. These procedures should include:

   a. packaging and transportation management,

   b. technical safety requirements/operational safety requirement flow-down,

   c. operating restrictions and system limitations,

   d. onsite packaging and transfer configuration restraint programs,

   e. transfer/transportation routes,

   f. onsite transfer vehicle management,

   g. packaging evaluation,

   h. occurrence reporting/abnormal events,

   i. administrative controls,

   j. training and qualification, and

   k. quality assurance requirements.

ANNEX 1
PREPARATION OF TRANSPORTATION SAFETY DOCUMENT AND SAFETY ASSESSMENT METHODOLOGY FOR PACKAGING AND TRANSFER ACTIVITIES SUBJECT TO 10 CFR PART 830 SUBPART B

1. INTRODUCTION. DOE O 461.2, *Onsite Packaging and Transfer of Materials of National Security Interest*, requires that each type of onsite transfer subject to Title 10 Code of Federal Regulations (CFR) Part 830, Subpart B, requirements is documented in an approved site-specific Transportation Safety Document (TSD). This TSD is expected to:

   a. Identify responsibilities and lines of authority.

   b. Identify and evaluate the hazard associated with the transfer.

   c. Define minimum safe packaging requirements.

   d. Describe transfer systems and operational controls used to minimize the probability and consequence of credible accidents.

   e. Describe the process and analysis used to ensure that safety requirements are established [NOTE: If U.S. Department of Transportation (DOT) compliance is the basis for the TSD, this analysis would be performed for each deviation from the hazardous materials regulations).

   f. Describe the site, including identifying boundaries.

   g. Describe emergency response and recovery actions for abnormal/off-normal events.

   h. Define the process for non-routine packaging and transfer activities.

   The TSD must be approved by the 10 CFR Part 830, Subpart B, risk acceptance authority (i.e., field organization manager). Upon approval, all onsite transfers must be conducted in accordance with the approved TSD and accompanying DOE/NNSA safety evaluation report.

2. PREFERRED FORMAT FOR TSD. The following is a preferred format for the TSD. However, in compliance with 10CFR Part 830, Subpart B, the format is consistent with the Documented Safety Analysis/Technical Safety Requirements. The level of detail required depends on the complexity of operations, number and location of workers at the site, quantities and types of materials being transported, transport routes, and need for special controls (including security/safeguard controls) to meet DOE transportation safety requirements.

   a. Chapter I, Scope and Applicability.

      (1) Scope. State the onsite transfers of materials of national security interest that support the overall mission(s) of the site.

(2) Applicability. Describe how the requirements of the document are applied to site and facility operations so that someone needing to transfer materials of national security interest can understand whether or not the requirements of the document apply to the movement in question.

b. Chapter II, Definitions and Acronyms.

Define all terms or acronyms used in the TSD that are relevant to onsite packaging and transfer operations. Define site-specific terms for the benefit of new employees or external reviewers of the document.

c. Chapter III, Site Description.

Provide enough information to enable a reader unfamiliar with the site to comprehend all site-specific discussion in the TSD.

d. Chapter IV, Organizational Responsibilities.

Clearly describe the authority and responsibilities of principal organizations and key positions within those organizations.

e. Chapter V, Requirements.

Reference the principal Federal, State, and local regulations, DOE Orders, and other requirements affecting onsite packaging and transfer, as well as site-specific requirements applicable to onsite packaging and transfer activities.

f. Chapter VI, Safety Assessment Methodology.

Describe the methodology used to achieve and demonstrate compliance with 10 CFR 830, Subpart B, including any probability or risk-based approaches used. Guidance on developing and applying a safety assessment methodology is provided in Section 3 of this annex.

g. Chapter VII, Routine Transfers.

(1) Identify the major categories of hazardous materials or hazard classes routinely transferred onsite. Identify and evaluate the following requirements in this chapter:

(2) Identify the hazards associated with the onsite nuclear material transfers.

(3) Analyze the hazards associated with the onsite nuclear material transfers, including credible accident scenarios.

(4) Identify available controls to mitigate and prevent any accident scenarios that represent an unacceptable risk.

(5) Identify administrative controls that include containment, communication, and control strategies.

(6) Identify safety management programs that are credited with reducing risk to include radiation protection, criticality safety, configuration management, change control, etc.

h. Chapter VIII, Non-routine Transfers.

(1) Present the process for evaluating and submitting an approval request for an exception (e.g., unplanned, abnormal transfer, or minor categories of hazardous materials) to the routine transfers requirements of Chapter VII. Identify and evaluate the following requirements in the chapter:

(2) Identify the hazards associated with the onsite nuclear material transfers.

(3) Analyze the hazards associated with the onsite nuclear material transfers, including credible accident scenarios.

(4) Identify available controls to mitigate and prevent any accident scenarios that represent an unacceptable risk.

(5) Identify administrative controls that include containment, communication, and control strategies.

(6) Identify safety management programs that are credited with reducing risk to include radiation protection, criticality safety, configuration management, change control, etc.

i. Chapter IX, Personnel Qualification and Training.

Identify and/or reference the training/qualification requirements for personnel involved with onsite packaging and transfer activities.

j. Chapter X, Documentation and Recordkeeping.

Records requirements must include retention of such items as packaging documentation [e.g., Safety Analysis Reports for Packaging (SARPs), test reports, or other packaging evaluations], personnel training and qualification records, change control documents, vehicle maintenance and inspection records, and documentation associated with both routine and non-routine transfers.

k. Chapter XI, Incident Reporting and Emergency Response.

Describe the incident reporting and emergency response programs/plans for the site. Present the lines of communication and the roles and responsibilities of key personnel involved in an emergency response or incident report specific to onsite

transfer. Planning should be adequate to cover all credible emergency situations to ensure effective response and recovery after a transport accident or incident.

l. Chapter XII, Transport Vehicle Operations.

Describe types of vehicles used for packaging and transfer operations per the TSD. Also, identify the maintenance and inspection process for these vehicles.

m. Chapter XIII, Technical Safety Requirements.

Technical Safety Requirements define the performance requirements of systems, structures and components (i.e., packaging and vehicles) and identify the safety management programs used by personnel to ensure safety. No safety limits or limiting control settings are expected for transportation activities because there are no processes or activities in which the operator intentionally causes a process variable to be manipulated that if left unchecked or uncontrolled, would result in catastrophic failure of a passive safety barrier. Thus, only limiting conditions of operations, design features, and administrative controls are envisioned for transportation activities.

3. SAFETY ASSESSMENT METHODOLOGY.

The following methodology must be used to support the safety basis for transfer systems:

a. Use of a Graded Approach.

(1) The TSD must enable a site to establish containment, control, and communication requirements for onsite movements in a consistent and justifiable manner, and must ensure that requirements established for an onsite movement are commensurate with the hazard of the material being transported.

(2) The performance requirements imposed on each hazard level in the hazardous materials hierarchy must be documented in Chapter VII of the TSD. This documentation must enable a site to establish containment, control, and communication requirements for onsite movements in a consistent and justifiable manner, and must ensure that requirements established for an onsite movement will be commensurate with the hazard of the material being transported (i.e., nuclear component, special assembly, and/or radioactive materials).

b. Safety Assessment. The safety assessment method chosen should be clearly defined within the TSD. For higher hazard transfers, it is recommended that a more quantitative analysis be applied (i.e., DOE-STD-3009). For lower hazard transfers the assessment can be considerably more qualitative.

This annex prescribes that a containment system be provided for all handling, staging, and transfer configurations for materials of national security interest. The

packaging used must be able to maintain confinement and/or containment of its contents under both normal use and credible onsite accident conditions. The safety assessment must document all credible onsite accident conditions for the various transfer and staging operations. Controls must be identified to mitigate any unacceptable risk to the public, workers, and the environment.

Reliance on packaging performance is the preferred way to ensure overall safety; however, an integrated approach that considers the packaging in combination with specific communication and control measures is also acceptable. As a first step, the analysis must be evaluated to determine what the packaging requirements are. Then the appropriate packaging must be identified and a basis provided for its selection as a control. Typically, if a certified package is chosen (i.e., DOT, DOE, NRC, etc.) the package already has specifications defined and performance attributes identified and no further analysis or support of the control is required. For non-certified packaging, a detailed analysis of the packaging in which the performance envelope of the packaging is clearly established is required.

The evaluation/safety assessment of the transfer system must be included in the TSD. This safety assessment may be straightforward or very complex, depending primarily on the packaging to be used for the hazardous materials movement.

The safety assessments for routine onsite hazardous materials movements may be documented in Chapter VII of the TSD or as standalone documents referenced in Chapter VIII. The process by which safety assessments for non-routine transfers are performed, documented, and approved must be described in Chapter VIII of the TSD. Documentation of the safety assessment may cover the following topics:

(1) Identify the onsite hazardous material transfer that is to occur.

(2) Identify and classify the hazardous material involved in the transfer.

(3) Identify normal and credible accident scenarios associated with the transfer.

(4) Analyze the hazardous material as a function of the credible accident scenario.

(5) Identify available controls for prevention or mitigation, including the packaging and appropriate basis for the packaging performance envelope.

(6) Select the appropriate controls and provide analysis, factoring in the control application.

(7) Identify the administrative controls and safety management programs that contribute to reduction of the risk.

c. Controls. Describe the controls required for the onsite transfers. These controls need only ensure that the packaging will not be exposed to transport conditions more severe than the packaging would experience during an offsite shipment.

(1) Compliance with DOT control and communication requirements for offsite transport is an option unless a non-certified package is being used. The DOT compliance option may be documented with no further evaluation. (Remember, the DOT tie-down and vehicle requirements would need to be imposed for a hazardous materials transport to be in full compliance with DOT regulations).

(2) For non-certified packages, controls must be commensurate with the hazard represented by the package being transported, and must ensure that the packaging operates within its established performance envelope. The hazard levels and associated performance requirements documented in chapter VII of the TSD will greatly facilitate development and justification of appropriate transport controls. All credited controls that maintain the safety envelope must flow forward into the appropriate Technical Safety Requirement (i.e., limiting condition of operations, design features, or administrative controls).

d. Communication. Describe the communication requirements for the onsite transfer. Again, full compliance with DOT communication and control requirements for offsite transport is an option for certified packaging. This option may be documented with no further evaluation. (Remember, full DOT/DOE compliance would include strict adherence to use of certified packaging, as well as the applicable marking, labeling, placarding, and shipping papers requirements).

The other option is to always develop site-specific communication requirements. Sites may develop other methods of communication with personnel involved with the transfer and with emergency response personnel. For non-certified packagings, communication requirements need to be established and evaluated as part of the entire transport system. As with the establishment of all transfer requirements, communication requirements must be commensurate with the hazard of the material being transported. Justification for communication requirements is provided based on the performance requirements documented in Chapter VII of the TSD. In some cases, special communication requirements will be described as part of the control requirements for the transfer. Such requirements must be repeated here.

e. Conclusion. The safety assessment must conclude that, based on the evidence provided, the transfer system provides a level of protection commensurate with the hazard of the material being transferred.

ANNEX 2
PREPARATION OF TRANSPORTATION SAFETY DOCUMENT AND SAFETY ASSESSMENT METHODOLOGY FOR PACKAGING AND TRANSFER ACTIVITIES NOT SUBJECT TO 10 CFR PART 830 SUBPART B

1. INTRODUCTION. DOE O 461.2, *Onsite Packaging and Transfer of Materials of National Security Interest*, requires that each type of onsite transfer comply with the principles of integrated safety management and applicable DOE Orders and regulations (e.g., 10 CFR Part 835, "Occupational Radiation Protection"). This is documented in an approved site-specific TSD, that is expected to:

   a. Identify responsibilities and lines of authority.

   b. Identify and evaluate the hazard associated with the transfer.

   c. Define minimum safe packaging requirements.

   d. Describe transfer systems and operational controls used to minimize the probability and consequence of credible accidents.

   e. Describe the process and analysis used to ensure that safety requirements are established.

   f. Describe the site, including identifying boundaries.

   g. Describe emergency response and recovery actions for abnormal/off-normal events.

   h. Define the process for non-routine packaging and transfer activities.

   The TSD must be approved by the appropriate DOE risk acceptance authority as determined by the field organization manager. Upon approval, all onsite transfers must be conducted in accordance with the approved TSD.

2. PREFERRED FORMAT FOR TSD. The following is a preferred format for the TSD. The level of detail required depends on the complexity of operations, number and location of workers at the site, quantities and types of materials being transported, number and complexity of site transport routes, and need for special controls (including safeguard controls) to meet DOE transportation safety requirements.

   a. Chapter I, Scope and Applicability.

      (1) Scope. State the onsite transfers of materials of national security interest that support the overall mission(s) of the site.

      (2) Applicability. Describe how the requirements of the document are applied to site and facility operations so that someone needing to transfer materials

of national security interest can understand whether or not the requirements of the document apply to the movement in question.

b. Chapter II, Definitions and Acronyms.

Define all terms or acronyms used in the TSD that are relevant to onsite packaging and transfer operations. Define site-specific terms for the benefit of new employees or external reviewers of the document.

c. Chapter III, Site Description.

Provide enough information to enable a reader unfamiliar with the site to comprehend all site-specific discussion in the TSD.

d. Chapter IV, Organizational Responsibilities.

Clearly describe the authority and responsibilities of principal organizations and key positions within those organizations.

e. Chapter V, Requirements.

Reference the principal Federal, State and local regulations, and DOE Orders, including identification of site-specific requirements applicable to onsite packaging and transfer activities.

f. Chapter VI, Safety Assessment Methodology.

Describe the methodology used to achieve and demonstrate compliance with integrated safety management principles. Guidance on developing and applying a safety assessment methodology is provided in Section 3 of this annex. The primary emphasis of the onsite transfer system for these materials should be placed on packaging design and packaging performance to ensure containment of materials during routine and non-routine onsite transfer activities. Well-designed packaging can reduce both the probability and the consequences of a hazardous material release for a given package handling scenario.

g. Chapter VII, Routine Transfers.

(1) Identify the major categories of hazardous materials or hazard classes routinely transferred onsite. Identify and evaluate the following requirements in this chapter:

(2) Identify the hazards associated with the onsite material transfers.

(3) Analyze the hazards associated with the onsite material transfers, including credible accident scenarios. This analysis will be more qualitative in nature than the analysis described in Annex 1.

(4) Identify available controls to mitigate and prevent any accident scenarios that are an unacceptable risk.

(5) Identify administrative controls that include containment, communication, and control strategies.

(6) Identify safety management programs that are credited with reducing risk to include radiation protection, configuration management, change control, etc.

h. Chapter VIII, Non-routine Transfers.

(1) Present the process for evaluating and submitting an approval request for an exception (e.g., unplanned, abnormal transfer, or minor categories of hazardous materials) to the routine transfers requirements of Chapter VII. Identify and evaluate the following requirements in this chapter:

(2) Identify the hazards associated with the onsite material transfers.

(3) Analyze the hazards associated with the onsite material transfers, including credible accident scenarios.

(4) Identify available controls to mitigate and prevent any accident scenarios that are an unacceptable risk.

(5) Identify administrative controls that include containment, communication, and control strategies.

(6) Identify safety management programs that are credited with reducing risk to include radiation protection, configuration management, change control, etc.

i. Chapter IX, Personnel Qualification and Training.

Identify and/or reference the training/qualification requirements for personnel involved with onsite packaging and transfer activities.

j. Chapter X, Documentation and Recordkeeping.

Records requirements must include retention of such items as packaging documentation [e.g., Safety Analysis Reports for Packaging (SARPs), test reports, or other packaging evaluations], personnel training and qualification records, change control documents, vehicle maintenance and inspection records, and documentation associated with both routine and non-routine transfers.

k. Chapter XI, Incident Reporting and Emergency Response.

Describe the incident reporting and emergency response programs/plans for the site. Present the lines of communication and the roles and responsibilities of key personnel involved in an emergency response or incident report specific to onsite transfer. Planning should be adequate to cover all credible emergency situations to ensure effective response and recovery after a transport accident or incident.

l. Chapter XII, Transport Vehicle Operations.

Describe types of vehicles used for packaging and transfer operations per the TSD. Also, identify the maintenance and inspection process for these vehicles.

m. Chapter XIII, Operational Safety Requirements.

Operational Safety Requirements define the performance requirements of systems, structures, and components (i.e., packaging, vehicles) and identify the safety management programs used by personnel to ensure safety. The nature of the consequences associated with these transfers is such that these activities will typically be appropriately controlled by administrative controls and safety management programs.

3. SAFETY ASSESSMENT METHODOLOGY.

The following methodology must be used to support the safety basis for less than hazard category 3 transfer systems activities:

a. Use of a Graded Approach. The TSD must enable a site to establish containment, control, and communication requirements for onsite movements in a consistent and justifiable manner, and ensure that requirements established for an onsite movement are commensurate with the hazard of the material being transported.

b. Safety Assessment. The safety assessment method chosen should be clearly defined within the TSD. For higher hazard transfers, it is recommended that a more quantitative analysis be applied. For lower hazard transfers, the assessment can be considerably more qualitative.

This annex prescribes that a containment system be provided for all handling, staging, and transfer configurations for materials of national security interest. The packaging used must be able to maintain confinement and/or containment of its contents under both normal use and credible onsite accident conditions. The safety assessment must document all credible onsite accident conditions for the various transfer and staging operations. Controls must be identified to mitigate any unacceptable risk to the public, workers, and the environment.

Reliance on packaging performance is the preferred way to ensure overall safety; however, an integrated approach that considers the packaging in combination with

specific communication and control measures is also acceptable. As a first step, the analysis must be evaluated to determine what the packaging requirements are. Then, the appropriate packaging must be identified and a basis provided for its selection as a control. Typically, if a certified package is chosen (i.e., DOT, DOE, NRC, etc.), the package already has specifications defined and performance attributes identified and no further analysis or support of the control is needed. For non-certified packaging, a detailed analysis of the packaging in which the performance envelope of the packaging is clearly established is required.

The evaluation/safety assessment of the transfer system must be included in the TSD. This safety assessment may be straightforward or very complex, depending primarily on the packaging to be used for the hazardous materials movement.

The safety assessments for routine onsite hazardous materials movements may be documented in Chapter VII of the TSD or as standalone documents referenced in Chapter VIII. The process by which safety assessments for non-routine transfers are performed, documented, and approved must be described in Chapter VIII of the TSD. Documentation of the safety assessment may cover the following topics:

(1) Identify the onsite hazardous material transfer that is to occur.

(2) Identify and classify the hazardous material involved in the transfer.

(3) Identify normal and credible accident scenarios associated with the transfer.

(4) Analyze the hazardous material as a function of the credible accident scenario.

(5) Identify available controls for prevention or mitigation, including the packaging and appropriate basis for the packaging performance envelope.

(6) Select the appropriate controls and provide analysis, factoring in the control application.

(7) Identify the administrative controls and safety management programs that contribute to reduction of the risk.

c. Controls. Describe the controls required for the onsite transfers. These controls need only ensure that the packaging will not be exposed to transport conditions more severe than the packaging would experience during an offsite shipment.

(1) Compliance with DOT control and communication requirements for offsite transport is an option unless a non-certified package is being used. The DOT compliance option may be documented with no further evaluation. (Remember, the DOT tiedown and vehicle requirements would

need to be imposed for a hazardous materials transport to be in full compliance with DOT regulations).

(2) For non-certified packages, controls must be commensurate with the hazard represented by the package being transported, and ensure that the packaging operates within its established performance envelope. The hazard levels and associated performance requirements documented in chapter VII of the TSD will greatly facilitate development and justification of appropriate transport controls.

(3) All credited controls that maintain the safety envelope must flow forward into the appropriate documented controls.

d. Communication. Describe the communication requirements for the onsite transfer. Again, full compliance with DOT communication and control requirements for offsite transport is an option for certified packaging. This option may be documented with no further evaluation. (Remember, full DOT/DOE compliance would include strict adherence to use of certified packaging as well as the applicable marking, labeling, placarding, and shipping papers requirements).

The other option is always to develop site-specific communication requirements. Sites may develop other methods of communication with personnel involved with the transfer and with emergency response personnel. For non-certified packaging, communication requirements need to be established and evaluated as part of the entire transport system. As with the establishment of all transfer requirements, communication requirements must be commensurate with the hazard of the material being transported. Justification for communication requirements is provided based on the performance requirements documented in Chapter VII of the TSD. In some cases, special communication requirements will be described as part of the control requirements for the transfer. Such requirements must be repeated here.

e. Conclusion. The safety assessment must conclude that, based on the evidence provided, the transfer system provides a level of protection commensurate with the hazard of the material being transferred.